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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,658	07/15/2004	Hiroataka Kawabata	MAT-8577US	4898
23122	7590	06/19/2007		
RATNERPRESTIA P O BOX 980 VALLEY FORGE, PA 19482-0980			EXAMINER HAMO, PATRICK	
			ART UNIT 3746	PAPER NUMBER
			MAIL DATE 06/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/501,658	Applicant(s) KAWABATA ET AL.	
	Examiner Patrick Hamo	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 4-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>15 Jul 2004, 22 Nov 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to a response to restriction/election filed by the applicants on April 12, 2007.

Election/Restrictions

Applicant's election with traverse of Group I, Species (a) in the reply filed on April 12, 2007 is acknowledged. The traversal is on the ground(s) that the election requirement violates MPEP 1893.03(d) because the election requirement provides no explanation of the unique special technical feature in each group and also fails to explain why each group lacks unity with each other group, and that the requirement also violates MPEP 806.04(e) because the applicant alleges that the species were created by sequentially going through the claims and isolating language from each claim. This is not found persuasive for the following reasons:

Regarding applicant's allegation that the election requirement violates MPEP 1893.03(d), the election requirement identifies the molybdenum sulfide coatings as the special technical feature in groups I and II. However, because this feature is known in the art, it does not qualify as a special technical feature and therefore group I lacks unity with group II.

Regarding applicant's allegation that the election requirement violates MPEP 806.04(e), the examiner contends that although the species are identified by the terminology used in the claims, each species constitutes an embodiment of the generic

invention, which is the use of molybdenum sulfide to coat two components in sliding contact with each other, and as such may be subject to a restriction requirement.

Therefore, the requirement is still deemed proper and is therefore made FINAL.

Claims 4-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on April 12, 2007.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, on page 69, lines 11-13, it is unclear what is meant by the phrases "uniformly placed" and "mixed layer", specifically to what extent "uniformly" qualifies "placed" and "mixed" qualifies "layer". In paragraph 184, the disclosure describes a method of forming the recesses and the mixed layer that comprises crashing particles of MoS₂ into the base material at great speed to form the recesses and dissolving MoS₂ in the base material to form a mixed layer, presumably of MoS₂ and the base material,

though this is not explicitly disclosed. However, this leads to further confusion in interpreting the intended scope of claim 1 because it seems to imply in the claim where it is stated "a mixed layer, to which molybdenum disulfide is bound, is formed on a surface of at least one of the first contact section and the second contact section", that rather than forming *a part* of the mixed layer, MoS₂ is bound *to* the mixed layer. It is also unclear what level of uniformity can be achieved and what level is being claimed when it seems the recesses are formed in high-speed conditions. Further complicating the understanding of the intended limitation of the claim is the disclosure, in paragraph 86, that the recesses are formed "almost uniformly". This apparent inconsistency between the disclosure and the claim language renders the claim, and all claims dependent therefrom, indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Sugiura et al., Pub. No. 2002/0159893.

Sugiura discloses a refrigerant compressor comprising a closed container (enclosed by housing 2), a compressor section (cylinder bores 1a), which is accommodated in the closed container for compressing refrigerant (p. 2, paragraph 18),

a driver (drive shaft 9) for driving the compressor section (p. 1, paragraph 16), and a first contact section 30A of a swash plate 10 and a second contact section of a shoe 20A are brought into contact and slid against each other by driving the compressor (see fig. 2A), wherein a mixed layer 31A, to which molybdenum disulfide is bound (p. 2, paragraph 24), is formed on surface 30A and inserted into recesses formed uniformly on both sides of the swash plate 10 (see fig. 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiura in view of Koelzer et al., Pat. No. 6,439,857.

Sugiura discloses all of the limitations substantially as claimed and as discussed above except for the following: that the first contact section and the second contact section are sliding components forming the compressor section, and that the first contact section and the second contact section are sliding components forming the compressor section.

However, Koelzer teaches a compressor with a PTFE material filled with Molybdenum Disulfide applied to the periphery of piston cups 24 that slide against

cylinder bores 23 as the compressor reciprocates, the piston/cylinder assembly constituting the compression section of the compressor (col. 3, ll. 37-40), the use of the MoS₂ mixture, a solid lubricant, reducing the need for oil-based liquid lubricants and thereby minimizing the undesirable effect of oil passage into the air stream (col. 6, ll. 13-17). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the compressor of Sugiura with the solid lubrication in the compression chamber of Koelzer in order to minimize the effect of oil passage into the stream of compressed gas.

Conclusion

Applicant is duly reminded that a complete response must satisfy the requirements of 37 C.F. R. 1.111, including: "The reply must present arguments pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references. A general allegation that the claims 'define a patentable invention' without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section. Moreover, 'The prompt development of a clear Issue requires that the replies of the applicant meet the objections to and rejections of the claims.'" Applicant should also specifically point out the support for any amendments made to the disclosure. See MPEP 2163.06 II(A), MPEP 2163.06 and MPEP 714.02. The "disclosure" includes the claims, the specification and the drawings.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Hamo whose telephone number is 571-272-3492. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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